What is claimed is:

1. An air conditioning system, in particular for motor vehicles, for heating and/or cooling a passenger compartment, comprising a compressor,
wherein the one compressor is also capable of powering at least two air conditioning circuits at the same time; i.e., in parallel.

2. The air conditioning system, in particular as recited in Claim 1,
wherein a first circuit can be used for cooling and, at the same time, a second circuit can be used for heating the supply air of a passenger compartment.

3. The air conditioning system, in particular as recited in Claim 1 or Claim 2,
wherein a branch point capable of splitting the high-pressure refrigerant flow into two streams is located in the circuit downstream of the compressor on the high-pressure side.

4. The air conditioning system, in particular as recited in Claim 3,
wherein an expansion valve is located downstream of the branch point in the second circuit.

5. The air conditioning system, in particular as recited in Claim 3 or Claim 4,
wherein a check valve is located downstream of the branch point in the first circuit.

6. An air conditioning system, in particular for motor vehicles, for heating and/or cooling a passenger compartment, comprising a compressor,
wherein a valve device capable of splitting the high-pressure refrigerant flow into two streams is located in the circuit downstream of the compressor on the high-pressure side.

7. The air conditioning system, in particular as recited in Claim 6,
wherein a first refrigerant flow can be used for cooling and, at the same time, a second refrigerant flow can be used for heating the supply air of a passenger compartment used.

8. The air conditioning system, in particular as recited in Claims 2 through 7,
wherein on the high-pressure side, the second refrigerant flow circuit branched off for heating uses the high refrigerant temperature resulting from compression to heat the

supply air of the passenger compartment, while the first refrigerant flow is available to the refrigeration circuit.

9. The air conditioning system, in particular as recited in Claim 8, wherein the high temperature of the high-pressure gas is used for heating a cooling water circuit via a heat exchanger.

10. The air conditioning system, in particular as recited in Claim 9, wherein the cooling water circuit heats the supply air of the passenger compartment via a heat exchanger.

11. The air conditioning system, in particular as recited in Claim 9 or Claim 10, wherein a throttling device or an expansion valve is located downstream of the heat exchanger.

12. The air conditioning system, in particular as recited in Claim 11, wherein a check valve is located downstream of the throttling device or the expansion valve; the check valve preventing refrigerant from flowing from the refrigeration circuit into the heating circuit.

13. The air conditioning system, in particular as recited in Claim 12, wherein downstream of the check valve, the heating circuit joins the refrigeration circuit on the low-pressure side, i.e., on the suction side of the compressor.

14. The air conditioning system, in particular as recited in Claim 8, wherein the high temperature of the high-pressure gas is used for heating the supply air of the passenger compartment via a heat exchanger.

15. The air conditioning system, in particular as recited in Claim 14, wherein a throttling device or an expansion valve is located downstream of the heat exchanger.

16. The air conditioning system, in particular as recited in Claim 15,

wherein a heat exchanger that reheats the refrigerant with cooling water is located downstream of the throttling device or the expansion valve.

17. The air conditioning system, in particular as recited in Claim 16, wherein a check valve is located downstream of the heat exchanger; the check valve preventing refrigerant from flowing from the refrigeration circuit into the heating circuit.

18. The air conditioning system, in particular as recited in Claim 17, wherein downstream of the check valve, the heating circuit joins the refrigeration circuit on the low-pressure side, i.e., on the suction side of the compressor.

19. The air conditioning system, in particular as recited in one of the preceding claims, wherein the additional heating circuit prevents window fogging.

20. The air conditioning system, in particular as recited in Claim 9, wherein the cooling water circuit is constituted by a small bypass added in the water circuit of the actual cooling water circuit of the internal combustion engine; the bypass being able to be opened and closed.

21. The air conditioning system, in particular as recited in Claim 16, wherein the heat exchanger can also use heat from the ambient air, or heat from engine parts or engine block parts, or heat from the exhaust tract in place of heat from the cooling water.

22. The air conditioning system, in particular as recited in Claim 16, wherein the volume flow of engine cooling water is controllable by a thermostatic control valve in order to control the heat flow.

23. The air conditioning system, in particular as recited in Claim 13, wherein turning on the air conditioning system, the supply to the compression chamber in a variable-stroke compressor is essentially shut off in order to remove liquid refrigerant from the compressor as quickly as possible.

24. The air conditioning system, in particular as recited in Claim 13 or Claim 23, wherein when turning on the cold air conditioning system, the small cooling water circuit is decoupled from the colder engine cooling water circuit at least until hardly any liquid refrigerant occurs on the high-pressure side of the compressor.

25. The air conditioning system, in particular as recited in Claim 13, Claim 23, or Claim 24, wherein the small cooling water circuit is opened to the engine cooling water circuit if, after the heat is transferred to the supply air of the passenger compartment, the temperature of the small cooling water circuit is lower than the temperature of the engine cooling water.

26. The air conditioning system, in particular as recited in Claim 13, Claim 23, Claim 24, or Claim 25, wherein when less heat is needed to heat the passenger compartment, the high-pressure gas flow branched off for heating is correspondingly reduced.

27. The air conditioning system, in particular as recited in Claim 13, Claim 23, Claim 24, Claim 25, or Claim 26, wherein when the engine cooling water is warm and the intention for the passenger compartment is to be cooled more, the circulation of the small circuit is shut off so that no additional heat is input into the system.

28. The air conditioning system, in particular as recited in Claim 13, Claim 23, Claim 24, Claim 25, Claim 26, or Claim 27, wherein when the engine is started cold and the intention is to heat the engine cooling water while refraining from heating the passenger compartment in the quickest possible manner, the small cooling water circuit is opened to the engine cooling water circuit, taking into account Claim 23.

29. The air conditioning system, in particular as recited in Claim 18, wherein when turning on the cold air conditioning system, the supply to the compression chamber in a variable-stroke compressor is essentially shut off in order to remove liquid refrigerant from the compressor as quickly as possible.

30. The air conditioning system, in particular as recited in Claim 18 or Claim 29,

wherein the heat input after the throttling in the heating branch is reduced as far as possible if the passenger compartment is to be cooled when the engine cooling water is warm.

31. The air conditioning system, in particular as recited in one of the preceding claims, wherein the waste heat of the hot gas is used for heating.

32. The air conditioning system, in particular as recited in one of the preceding claims, wherein the gases used as the refrigerant are gases which reach high temperatures, in particular 120°C, on the high-pressure side when circulated during operation.

33. The air conditioning system, in particular as recited in one of the preceding claims, wherein CO2 is used as the refrigerant.

34. An air conditioning system, in particular for motor vehicles, for heating and/or cooling a passenger compartment, comprising a compressor,
characterized by at least one inventive feature disclosed in the application documents.